

Work Order ID 117020

117020

Page 1

April-24-14 9:06:30 AM

Item ID: D4306-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Rib

Start Date: 5/08/14 Start Qty: 8.00

8 10
8 10

Cust Item ID:

Required Date: 5/08/14 Req'd Qty: 8.00

Customer:

Reference:

Approvals:

Process Plan: MLS

Date: 14-04-28

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D4306

C

100

0.00

100

Large Fab

Memo

0.00

Large Fab

1- Cut tube 50" DMC 14-7-9
2- Bend tube with manuel pipe bender as per DT9567
*** Make line at 9.00" and use jig for other lines, and ensure seam in place on side of tube when bending***
3- Trim access tube material to finish size as per dwg D4306

10x CC 14-7-9

110

QC6- Inspect dimensions to drawing

0.00

110

QC

Memo

0.00

Quality Control

10x

DAS 43 9-88

14-7-10

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

| Work Order: _____ Part No. _____ NCR No. _____ | | | | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/> | | AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div> | | | | | |
|--|------|------|-----|--|-------------------|---|-------------|--------------|--------------|--|--|
| Root Cause | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | |
| Design | | | | | | | | | | | |
| Doc/Data | | | | | | | | | | | |
| Equip/Tooling | | | | | | | | | | | |
| Handling/Pre | | | | | | | | | | | |
| Material | | | | | | | | | | | |
| Operator | | | | | | | | | | | |
| Offset/Setup | | | | | | | | | | | |
| Process | | | | | | | | | | | |
| Supplier | | | | | | | | | | | |
| Training | | | | | | | | | | | |
| Transport | | | | | | | | | | | |
| Unapproved | | | | | | | | | | | |

| FAULT CATEGORY | | | | | | | |
|--|--|--|--|---|--|--|--|
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function | | <input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence | | <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other | |

Work Order ID 117020

117020

Page 2

April-24-14 9:06:30 AM

Item ID: D4306-1

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Rib

Start Date: 5/08/14

Start Qty: 8.00

8

Cust Item ID:

Required Date: 5/08/14

Req'd Qty: 8.00

8

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

Identify as per dwg & Stock Location:

0.00

120

Packaging

Memo

0.00

Packaging

10x DAS 43 9.98 14.7.10

130

QC21- Final Inspection - Work Order Release

0.00

130

QC

Memo

0.00

Quality Control

MCS 14-07-11

MCS 14-07-11

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

| | | | | | | | | | | | | | | | | | | |
|--|--|--|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____ Part No. _____ NCR No. _____ | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/> | AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube <input type="checkbox"/></td> <td style="width:15%;">Crosstube <input type="checkbox"/></td> <td style="width:15%;">Water Jet <input type="checkbox"/></td> <td style="width:15%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> | |
| Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | | | | | | | | | | | | | | | |
| Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | | | | | | | | | | | | | | | |
| Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | | | | | | | | | | | | | | | |
| Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> | | | | | | | | | | | | | | | | |

| Root Cause | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Design | | | | | | | | | |
| Doc/Data | | | | | | | | | |
| Equip/Tooling | | | | | | | | | |
| Handling/Pre | | | | | | | | | |
| Material | | | | | | | | | |
| Operator | | | | | | | | | |
| Offset/Setup | | | | | | | | | |
| Process | | | | | | | | | |
| Supplier | | | | | | | | | |
| Training | | | | | | | | | |
| Transport | | | | | | | | | |
| Unapproved | | | | | | | | | |

FAULT CATEGORY

| | | | |
|--|--|---|--|
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other |
|--|--|---|--|

Picklist Print

April-24-14 9:06:33 AM

Page 1

Work Order ID: 117020

117020

Parent Item: D4306-1

D4306-1

Parent Item Name: Rib

Start Date: 5/08/14

Required Date: 5/08/14

Start Qty: 8.00

Required Qty: 8.00

Comments: IPP Rev:A 11.01.20 new issue DD verf:EC
11.03.03 AS PER DWG REV.C DD verf:EC

IPP Rev:B

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| M304TS0.750W.049 | | Purchased | | No | | 100 | f | 1,093.251 | 4.1666 | 36 | | | |

M304TS0 750W 049

**

14-7-9 D14C

304 SQ Tube .75x.75x.049W

Location

Loc Qty

Loc Code

WA004

129041

1093.251553

M126039

27.625

M127493

315.67

M127821

70.3865526

M128414

79.57

M128780

600

460

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

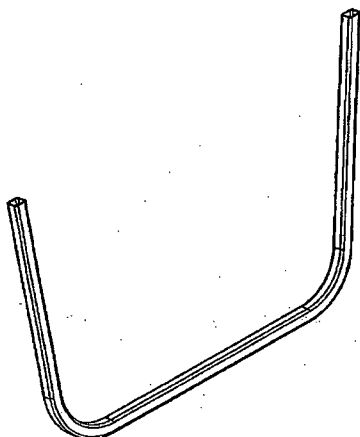
QA Closed: _____ Date: _____

Work Order update only ☐

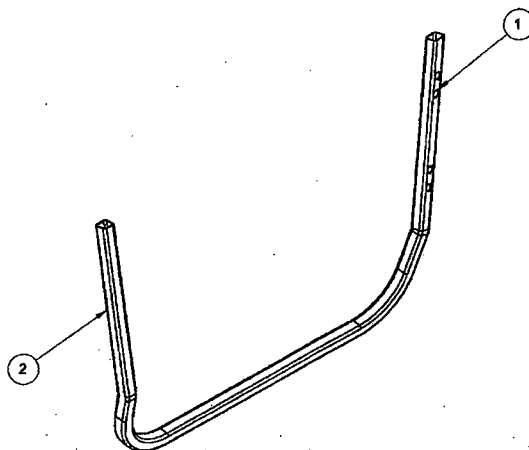
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|--|------------------------------------|--|--------------------------------------|--|-------------------|--|-------------|--------------|--------------|--|--|------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | |
| Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | |
| Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | | | | | | | | | | | | | | | | | |
| Design <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Doc/Data <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Equip/Tooling <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Handling/Pre <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Material <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operator <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Offset/Setup <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Process <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplier <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Training <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transport <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unapproved <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| FAULT CATEGORY | | | | | | | |
|--|--|--|--|---|--|--|--|
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function | | <input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence | | <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other | |

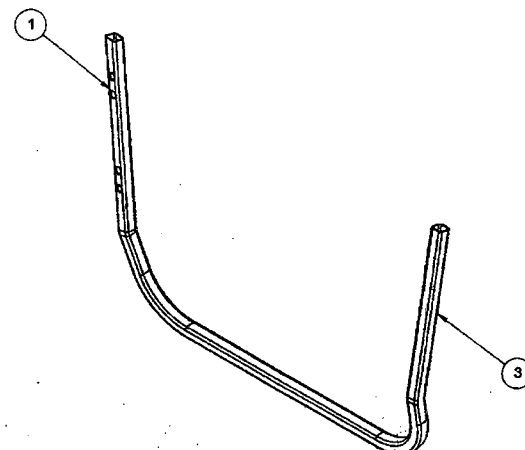
| ITEM | QTY -043 | QTY -044 | QTY -045 | P/N | DESCRIPTION |
|------|-------------|-------------|-------------|-----------|--------------|
| | X | | | D4306-043 | RIB ASSY, LH |
| | | X | | D4306-044 | RIB ASSY, RH |
| | | | X | D4306-045 | RIB ASSY |
| 1 | 4 | 4 | 4 | D3759-1 | BUSHING |
| 2 | 1 | | | D4306-3 | RIB |
| 3 | | 1 | | D4306-4 | RIB |
| 4 | | | 1 | D4306-5 | RIB |



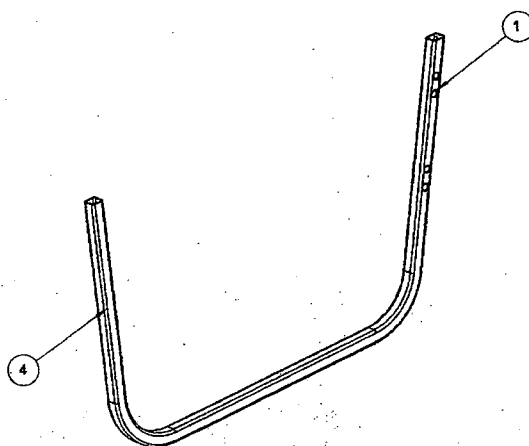
D4306-1 RIB



D4306-043 RIB ASSY, LH



D4306-044 RIB ASSY, RH

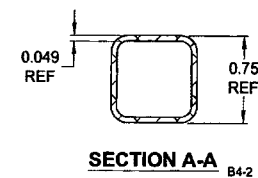
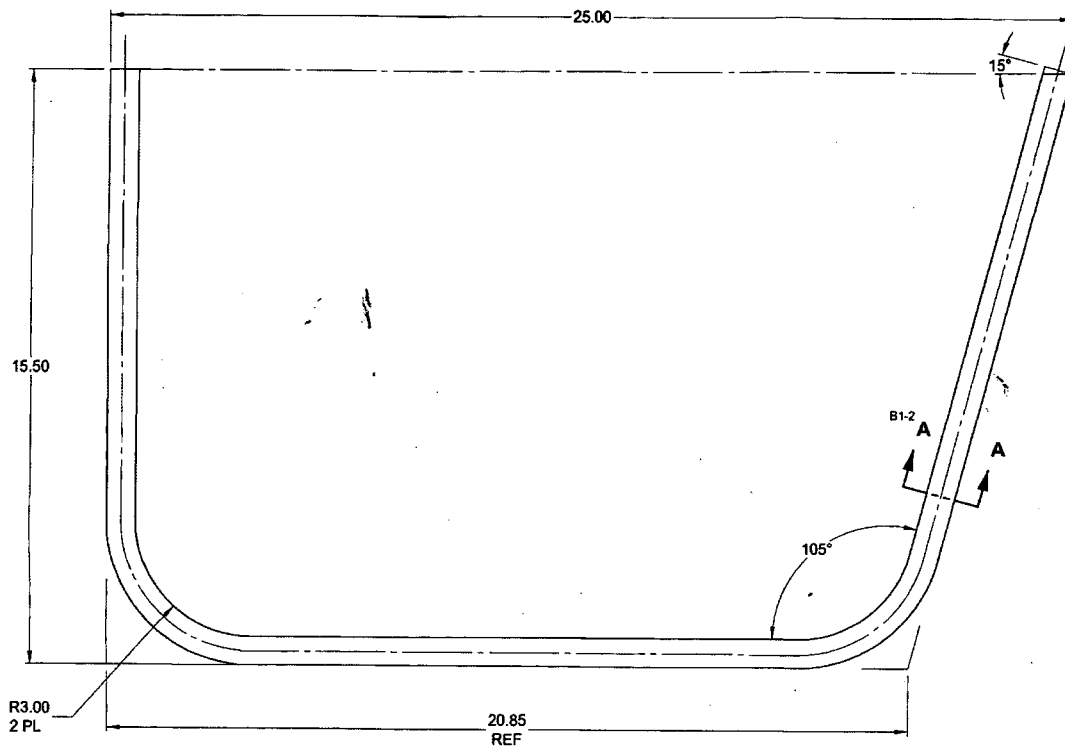


D4306-045 RIB ASSY

117020 MLS
1404-28

RELEASED
2011-03-10

| | | | |
|------------|---|--|--------------|
| REV. | DESCRIPTION | BY | DATE |
| C | REFERENCE LENGTH CHANGED TO 52.0" FOR D4306-3, D4306-4 RIBS (A7-41-6); INCREASED LENGTH OF D4306-3, D4306-4 RIBS BY 0.65" (C7-4, C8-4, C1-6, C2-6); CHANGED CUT ANGLE FROM 19° TO 22° (B8-4, B1-6); ADDED 4.50" REF DIM ON D4306-043/044 (B6-3, B3-6) | SC | 11.02.09 |
| B | D4306-043, D4306-044, D4306-045 ADDED | SC | 10.12.17 |
| A | NEW ISSUE | CP | 10.11.29 |
| DESIGN | CP | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | SC | | |
| CHECKED | | DRAWING NO. | REV. C |
| MFG. APPR. | | D4306 | SHEET 1 OF 8 |
| APPROVED | | TITLE | SCALE |
| DE APPR. | | RIB | NTS |
| DATE | 11.02.09 | COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON OR COMPANY WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD. | |



RELEASED
2011-02-24

NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SQUARE TUBE, 0.75 X 0.75 X 0.049 WALL
REF DART SPEC. M304TS0.750W.049
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 1.78 lbs
- 8) TUBE FLAT LENGTH 50.0 REF

| | | | |
|------------|----------|---|------------------------|
| DESIGN | CP | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | SC | | |
| CHECKED | | DRAWING NO. D4306 | REV. C SHEET 2 OF 8 |
| MFG. APPR. | | TITLE RIB | SCALE NTS |
| DE APPR. | | <small>COPYRIGHT © 2010 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small> | |
| DATE | 11.02.09 | | |

